



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,492	02/05/2001	Michele Bargauan	34057/GM/1p	8462
7590	03/24/2004		EXAMINER	
MODIANO & ASSOCIATI Via Meravigli, 16 MILANO, 20123 ITALY			PATHAK, SUDHANSU C	
			ART UNIT	PAPER NUMBER
			2634	2

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/775,492	BARGAUAN, MICHELE	
Examiner	Art Unit		
Sudhanshu C. Pathak	2634		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on Feburary 5<sup>th</sup>, 2001.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-16 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on February 5<sup>th</sup>, 2001 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All    b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_.  
\_\_\_\_\_

## DETAILED ACTION

1. Claims 1-to-16 are pending in the application.

### *Drawings*

2. Figures 1-3 are objected to because none of the elements in the Figures is labeled. For Example, in Fig. 1 the element designated "2" should be labeled as a "multiplier" or the element designated "4" should be labeled as an "oscillator", this should be done for all the elements in all the Figures.

Corrective Action is required.

3. Figure 1 discloses a ZIF implementation for converting a real signal into a complex signal however the Figure does not disclose a phase shifter for shifting the oscillator (element 4) signal by 90 degrees to multiply with the input signal on one of the branches (either using the multiplier "2" or "3" not both) to obtain the complex signal.

Corrective Action is required.

### *Specification*

4. The abstract of the disclosure is objected to because:

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50** to 150 words. The length of the Abstract seems to be too short so as to clearly disclose the invention. Furthermore, words such as "**inherent** quadrature" are do not provide a clear description of the nature of the signal obtained and should not be included in the Abstract.

5. The disclosure is objected to because of the following informalities:

On Page 1, lines 17-21 of the Specification, refer to Figure 1, reference numerals "5" and "6" respectively as signals to designate the complex component (sine) and the real component (cosine), however Figure 1 does not designate an element "6".

On Page 3, lines 19-25 of the Specification, refers to sending of the sum signal (Fig. 2, element 9) for a period equal to four times the band-center frequency of the signal to be converted (Fig. 2, element 1) on the branch "I", and for a period on the branch "Q" with a frequency equal to twice the band-center frequency of the signal to be converted (Fig. 2, element 1). The Specification refers to the time the selector sends the "sum" signal on the "I" branch, but does not specify the time the signal is sent to the "Q" branch, but does specify the frequency at which it is on branch "Q". It is recommended that both the "I" & "Q" branches be referred to in terms of the time the selector selects the "I" or the "Q" branch.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-to-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way

as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding to Claims 1-to-16, the specification does not disclose in a full, clear and exact terms as to **How the components connected as described in the specification and Figures 2-3 results in the complex signal** converted from the real signal. Furthermore, it is not clear if the

“first adder” performs the function of a mixer (adding the frequencies of the two input signals) or a sampler (adding multiple samples to the incoming signal due to a higher sampling rate). It is also not clear as to how the selector selecting the “I” branch for a period of four times the band-center frequency of the incoming signal and selecting the “Q” branch for a period of two times the band-center frequency of the incoming signal; it is not clear how this uneven selection of time between the “I” & “Q” branches results in a quadrature between the two branches. It is again not clear how the multipliers “14” & “15” function or if it works as a mixer it is again not clear how the mixer works with a square wave input and a sinusoid input being mixed; more details on the mixer (Fig. 2, elements 14 & 15) operation are required, furthermore it is again not clear how inverting (multiplying by “1” & “-1”) the oscillator signal produces the “I” & “Q” signal.

In regards to Figure 3, it is again not clear how the adders “18” & “19” operate as a selector and also how the adders function (mixer or sampler). Furthermore, a dc-offset (Fig. 3, element 23) is implemented so as to

avoid removing the DC-component at the threshold circuits (Fig. 3, elements 14 & 15), however these components are still implemented in the embodiment as described in Figure 3.

8. It is recommended that the specification describe in detail as to the function of each of the components in the invention and to further provide a graphical representation of each of the signals input into the components and signals output from the components.

Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (703) 305-0341. The examiner can normally be reached (Monday-Friday from 8:30 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to:

Crystal Part II, 2121 Crystal Drive, Arlington, VA, Sixth Floor  
(Receptionist).

Any inquiry of a general nature or relating to the status of this application  
or proceeding should be directed to the Technology Center 2600  
Customer Service Office whose telephone number is (703) 306-0377.



STEPHEN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600